WHAT IS CLAIMED IS:

1. A control apparatus for a vibration type actuator, which makes driving vibration at a driving unit of a vibration member by applying an alternating signal to an electro-mechanical energy conversion element and uses at least a frequency of the alternating signal as a speed control parameter, said apparatus comprising:

a driving circuit capable of changing a driving voltage of the alternating signal to be applied to said electro-mechanical energy conversion element; and

a control circuit which controls said driving circuit so that at least an absolute value of a tilt of a frequency-speed characteristic of said actuator is within a desired range in a frequency band of predetermined range.

2. A control apparatus for a vibration type actuator, which makes driving vibration at a driving unit of a vibration member by applying an alternating signal to an electro-mechanical energy conversion element and uses at least a frequency of the alternating signal as a speed control parameter, said apparatus comprising:

a driving circuit capable of changing a driving voltage of the alternating signal to be applied to said electro-mechanical energy conversion element; and

a control circuit which controls said driving circuit so that an absolute value of a tilt of a frequency-speed characteristic of said actuator is a predetermined value or more at least in a frequency band of predetermined range.

3. An apparatus according to Claim 1, wherein said control circuit sets a change rate of the driving voltage to the frequency.

4. An apparatus according to Claim 2, wherein said control circuit sets a change rate of the driving voltage to the frequency.

5. An apparatus according to Claim 1, wherein said driving circuit includes a switching circuit which performs on and off operations in response to a driving pulse and applies a voltage according to the switching operation of said switching circuit to said electro-mechanical energy conversion element, and said control circuit changes the width of the driving pulse according to the frequency so that the absolute value of the tilt of the frequency-speed characteristic of said actuator is within the predetermined range.

6. An apparatus according to Claim 2, wherein said driving circuit includes a switching circuit which

performs on and off operations in response to a driving pulse and applies a voltage according to the switching operation of said switching circuit to said electro-mechanical energy conversion element, and said control circuit changes the width of the driving pulse according to the frequency so that the absolute value of the tilt of the frequency-speed characteristic of said actuator is the predetermined value or more.

7. An apparatus according to Claim 1, further comprising a detection circuit which detects a speed and/or a position of said vibration type actuator, wherein said control circuit changes the driving voltage on the basis of detection information from said detection circuit if said actuator reaches a predetermined position or a movement amount.

8. A control apparatus for a vibration type actuator, which makes driving vibration at a driving unit of a vibration member by applying an alternating signal to an electro-mechanical energy conversion element and controls at least a frequency of an alternating signal as a speed control parameter, said apparatus comprising:

a driving circuit capable of changing a driving voltage of the alternating signal to be applied to said electro-mechanical energy conversion element; and

a control circuit for at least performing control in a frequency range higher than a predetermined frequency so that the driving voltage to be applied to said electro-mechanical energy conversion element by said driving circuit decreases as the predetermined frequency becomes a higher frequency.

9. An apparatus according to Claim 8, wherein said control circuit decreases the driving voltage to be applied to said electro-mechanical energy conversion element as the predetermined frequency becomes a higher frequency so that an absolute value of a tilt of a frequency-speed characteristic in case of changing a frequency of said actuator by a unit amount is within a predetermined range or is a predetermined value or more.

10. An apparatus according to Claim 8, wherein the driving voltage is changed by changing a driving pulse width in said driving circuit of applying the driving voltage to said electro-mechanical energy conversion element.

11. An apparatus according to Claim 8, wherein the driving voltage is changed by changing a gain of an amplifier in said driving circuit of applying the driving voltage to said electro-mechanical energy conversion element.